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FIG. 1a

FIG. 1	FIG. 1a FIG. 1b
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Sequence of the PCV Imp1011-48121 isolate (SEQ ID No. 1)

1 AATTCAACCT TAACCTTTCT TATTCTGTAG TATTCAAAGG GCACAGAGCG
51 GGGGTTTGAG CCCCTCCTG GGGGAAGAAA GTCATTAATA TTGAATCTCA
101 TCATGTCCAC CGCCCAGGAG GCGGTTCTGA CTGTGGTTCG CTTGACAGTA
151 TATCCGAAGG TCGGGGAGAG GCGGGTGTG AAGATGCCAT TTTTCCTTCT
201 CCAGCGGTAA CCGTGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA
251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTCCG GTAACGCCTC
301 CTTGGATACG TCATATCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCGAGCAAGA AGAATGGAAG AAGCGGACCC CAACCCATA AAAGGTGGGT
451 GTTCACTCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGATC
501 TTCCAATATC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA
601 GACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCGAAAGG AACAGATCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC
701 AACTTACTGA TGGAGTGTGG AGCTCCTAGA TCTCAGGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CCTTGTTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCCTGTA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT
851 GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACTAA
901 TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTTATTG ATGACTTTTA
1051 TGGCTGGCTG CCCTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGACTGTAGA GACTAAAGGT GGAAGTGTAC CTTTTTTGGC CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTTT ATCGGAGGAT TACTTCCTTG GTATTTTGA

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FIG. 1b

FIG. 1	FIG. 1a FIG. 1b
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1251 AGAATGCTAC AGAACAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCTT
1301 TCCCCCCEAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCAT TAAGGGTTAA GTGGGGGGTC
1401 TTTAAGATTA AATTCTCTGA ATTGTACATA CATGGTTACA CGGATATTGT
1451 ATTCTGGTC GTATATACTG TTTTCGAACG CAGTGCCGAG GCCTACGTGG
1501 TCTACATTTT CAGCAGTTTG TAGTCTCAGC CACAGCTGGT TTCTTTTGTT
1551 GTTTGGTTGG AAGTAATCAA TAGTGGAATC TAGGACAGGT TTGGGGGTAA
1601 AGTAGCGGGA GTGGTAGGAG AAGGGCTGGG TTATGGTATG GCGGGAGGAG
1651 TAGTTTACAT AGGGGTCATA GGTGAGGGCT GTGGCCTTTG TTACAAAGTT
1701 ATCATCTAGA ATAACAGCAC TGGAGCCAC TCCCCTGTCA CCCTGGGTGA
1751 TCGGGGAGCA GGGCCAG

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FIG. 2a

FIG. 2	FIG. 2a
	FIG. 2b

Sequence of the PCV Imp1011-48285 isolate (SEQ ID No. 2)

1 AATTCAACCT TAACCTTTCT TATTCTGTAG TATTCAAAGG GCACAGAGCG
51 GGGGTTTGAG CCCCTCCTG GGGGAAGAAA GTCATTAATA TTGAATCTCA
101 TCATGTCCAC CGCCAGGAG GCGGTTTTGA CTGTGGTTCG CTTGACAGTA
151 TATCCGAAGG TCGGGGAGAG GCGGGTGTG AAGATGCCAT TTTTCCTTCT
201 CCAGCGGTAA CCGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA
251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTCCG GTAACGCCTC
301 CTTGGATACG TCATATCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCCATA AAAGGTGGGT
451 GTTCACTCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGATC
501 TTCCAATATC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA
601 GACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCGAAAGG AACAGATCAG CAGAATAAAG AATACTGCAG TAAAGAAGGC
701 AACTTACTGA TGGAGTGTGG AGCTCCTAgA TCTCagGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CTTGTTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCCTGTA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT
851 GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACTAA
901 TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTTATTG ATGACTTTTA
1051 TGGCTGGCTG CCCTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGA CTG TAGA GACTAAAGGT GGA ACTGTAC CTTTTTTGGC CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTTT ATCGGAGGAT TACTTCCTTG GTATTTTGGA

FIG. 2a: 29648260

FIG. 2b

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1251  AGAATGCTAC  AGAACAATCC  ACGGAGGAAG  GGGGCCAGTT  CGTCACCCTT
1301  TCCCCCCCAT  GCCCTGAATT  TCCATATGAA  ATAAATTACT  GAGTCTTTTT
1351  TATCACTTCG  TAATGGTTTT  TATTATTCAT  TAAGGGTTAA  GTGGGGGGTC
1401  TTTAAGATTA  AATTCTCTGA  ATTGTACATA  CATGGTTACA  CGGATATTGT
1451  ATTCCTGGTC  GTATATACTG  TTTTCGAACG  CAGTGCCGAG  GCCTACGTGG
1501  TCTACATTTT  CAGTAGTTTG  TAGTCTCAGC  CACAGCTGAT  TTCTTTTGTT
1551  GTTTGGTTGG  AAGTAATCAA  TAGTGGAATC  TAGGACAGGT  TTGGGGGTAA
1601  AGTAGCGGGA  GTGGTAGGAG  AAGGGCTGGG  TTATGGTATG  GCGGGAgGAG
1651  TAGTTTACAT  AGGGGTCATA  GGTGAyGGCT  GTGGCCTTTG  TTACAAAGTT
1701  ATCATCTAGA  ATAACAGCAC  TGGAGCCCAC  TCCCCGTCA  CCCTGGGTGA
1751  TCGGGGAGCA  GGGCCAG

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FIG. 3a

FIG. 3	FIG 3a
	FIG. 3b

Sequence of the PCV Imp999 isolate (SEQ ID No. 3)

1 AATTCAACCT TAACCTTTTT TATTCTGTAG TATTCAAAGG GTATAGAGAT
 51 TTTGTTGGTC CCCCTCCCG GGGGAACAAA GTCGTCAATA TTAAATCTCA
 101 TCATGTCCAC CGCCCAGGAG GCGTTCTGA CTGTGGTAGC CTTGACAGTA
 151 TATCCGAAGG TGCGGGAGAG GCGGGTGTG AAGATGCCAT TTTTCCTTCT
 201 CCAACGGTAG CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA
 251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTGCG GTAACGCCTC
 301 CTTGGATACG TCATAGCTGA AAACGAAAGA AGTGCCTGT AAGTATTACC
 351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
 401 CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCACATA AAAGGTGGGT
 451 GTTCACGCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGAGC
 501 TCCCAATCTC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
 551 GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA
 601 AACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
 651 AAGCCAAAGG AACTGATCAG CAGAATAAAG AATATTGCAG TAAAGAAGGC
 701 AACTTACTTA TTGAATGTGG AGCTCCTCGA TCTCAAGGAC AACGGAGTGA
 751 CCTGTCTACT GCTGTGAGTA CCTTGTGGA GAGCGGGAGT CTGGTGACCG
 801 TTGCAGAGCA GCACCCTGTA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT
 851 GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACCAA
 901 TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
 951 CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG
 1001 TGGTGGGATG GTTACCATGG TGAAGAAAGT GTTGTTATTG ATGACTTTTA
 1051 TGGCTGGCTG CCGTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
 1101 TGA CTGATTACCA GACTAAAGGT GGAAGTGTAC CTTTTTGGC CCGCAGTATT
 1151 CTGATTACCA GCAATCAGAC CCCGTTGGAA TGGTACTCCT CAACTGCTGT
 1201 CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTTCCTTG GTATTTTGA

FIG. 3a

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FIG. 3b

FIG. 3	FIG. 3a
	FIG. 3b

1251 AGAATGCTAC AGAACAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCTT
1301 TCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCAT TTAGGGTTTA AGTGGGGGGT
1401 CTTTAAGATT AAATTCTCTG AATTGTACAT ACATGGTTAC ACGGATATTG
1451 TAGTCCTGGT CGTATATACT GTTTTCGAAC GCAGTGCCGA GGCCTACGTG
1501 GTCCACATTT CTAGAGGTTT GTAGCCTCAG CCAAAGCTGA TTCCTTTTGT
1551 TATTTGGTTG GAAGTAATCA ATAGTGGAGT CAAGAACAGG TTTGGGTGTG
1601 AAGTAACGGG AGTGGTAGGA GAAGGGTTGG GGGATTGTAT GGCGGGAGGA
1651 GTAGTTTACA TATGGGTCAT AGGTTAGGGC TGTGGCCTTT GTTACAAAGT
1701 TATCATCTAG AATAACAGCA GTGGAGCCCA CTCCCCTATC ACCCTGGGTG
1751 ATGGGGGAGC AGGGCCAG

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FIG. 4	FIG. 4a FIG. 4b
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[illegible]

1 AATTC AACCT FAACCTTTCT TATTCTGTAG TATTC AAAGG GTATAGAGAT
51 TTTGTTGGTC CCCCCTCCCG GGGGAACAAA GTCGTCAATT TTAAATCTCA
101 TCATGTCCAC CGCCCAGGAG GCGCTGTGA CTGTGGTACG CTTGACAGTA
151 TATCCGAAGG TGC GGGAGAG GCGGGTGTG AAGATGCCAT TTTTCCTTCT
201 CCAACGGTAG CGGTGGCGGG GGTGGACGAG CCAGGGGCGG CGGCGGAGGA
251 TCTGGCCAAG ATGGCTGCGG GGGCGGTGTC TTCTTCTGCG GTAACGCCTC
301 CTTGGATACG TCATAGCTGA AAACGAAAGA AGT GCGCTGT AAGTATTACC
351 AGCGCACTTC GGCAGCGGCA GCACCTCGGC AGCACCTCAG CAGCAACATG
401 CCCAGCAAGA AGAATGGAAG AAGCGGACCC CAACCACATA AAAGGTGGGT
451 GTTCACGCTG AATAATCCTT CCGAAGACGA GCGCAAGAAA ATACGGGAGC
501 TCCCAATCTC CCTATTTGAT TATTTTATTG TTGGCGAGGA GGGTAATGAG
551 GAAGGACGAA CACCTCACCT CCAGGGGTTC GCTAATTTTG TGAAGAAGCA
601 AACTTTTAAT AAAGTGAAGT GGTATTTGGG TGCCCGCTGC CACATCGAGA
651 AAGCCAAAGG AACTGATCAG CAGAATAAAG AATATTGCAG TAAAGAAGGC
701 AACTTACTTA TTGAATGTGG AGCTCCTCGA TCTCAAGGAC AACGGAGTGA
751 CCTGTCTACT GCTGTGAGTA CCTTGTTGGA GAGCGGGAGT CTGGTGACCG
801 TTGCAGAGCA GCACCTGTGA ACGTTTGTCA GAAATTTCCG CGGGCTGGCT
851 GAACTTTTGA AAGTGAGCGG GAAAATGCAG AAGCGTGATT GGAAGACCAA
901 TGTACACGTC ATTGTGGGGC CACCTGGGTG TGGTAAAAGC AAATGGGCTG
951 CTAATTTTGC AGACCCGGAA ACCACATACT GGAAACCACC TAGAAACAAG
1001 TGGTGGGATG GTTACCATGG TGAAGAAGTG GTTGTATTG ATGACTTTTA
1051 TGGCTGGCTG CCGTGGGATG ATCTACTGAG ACTGTGTGAT CGATATCCAT
1101 TGA CTGTAGA GACTAAAGGT GGA ACTGTAC CTTTTTTGGC CCGCAGTATT
1151 CTGATTACCA GCAATCAGAC CCCGTGGGAA TGGTACTCCT CAACTGCTGT
1201 CCCAGCTGTA GAAGCTCTCT ATCGGAGGAT TACTTCCTTG GTATTTTGGGA

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FIG. 4b

FIG. 4	FIG. 4a FIG. 4b
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1251 AGAATGCTAC AGAACAATCC ACGGAGGAAG GGGGCCAGTT CGTCACCCTT
1301 TCCCCCCCAT GCCCTGAATT TCCATATGAA ATAAATTACT GAGTCTTTTT
1351 TATCACTTCG TAATGGTTTT TATTATTCAT TTAGGGTTTA AGTGGGGGGT
1401 CTTTAAGATT AAATTCTCTG AATTGTACAT ACATGGTTAC ACGGATATTG
1451 TAGTCCTGGT CGTATTTACT GTTTTCGAAC GCAGCGCCGA GGCCTACGTG
1501 GTCCACATTT CCAGAGGTTT GTAGTCTCAG CCAAAGCTGA TTCCTTTTGT
1551 TATTTGGTTG GAAGTAATCA ATAGTGGAGT CAAGAACAGG TTTGGGTGTG
1601 AAGTAACGGG AGTGGTAGGA GAAGGGTTGG GGGATTGTAT GGCGGGAGGA
1651 GTAGTTTACA TATGGGTCAT AGGTTAGGGC TGTGGCCTTT GTTACAAAGT
1701 TATCATCTAG AATAACAGCA GTGGAGCCCA CTCCCCTATC ACCCTGGGTG
1751 ATGGGGGAGC AGGGCCAG

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FIG. 5a

FIG. 5	FIG. 5a
	FIG. 5b
	FIG. 5c
	FIG. 5d

CLUSTAL W multiple sequence alignment

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PCVPK-15      AATTCATATTTAGCCTTTCTAATACGGTAGTATTGGAAAGGTAGGGGTAGGGGGTTGGTG
IMP999-ECO    AATTCAACCTTAACCTTTTTTATTCTGTAGTATTCAAAGGGTATAGAGATTTTGTGGTC
IMP1010-ST    AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGGTATAGAGATTTTGTGGTC
IMP1011-48    AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGGCACAGAGCGGGGGTTTGAG
IMP1011-48    AATTCAACCTTAACCTTTCTTATTCTGTAGTATTCAAAGGGCACAGAGCGGGGGTTTGAG
*****      *** ***** * * * * ***** * * * * *      **** *

PCVPK-15      CCGCCTGAGGGGGGGAGGAACTGGCCGATGTTGAATTTGAGGTAGTTAACATTCCAAGAT
IMP999-ECO    CCCCCTCCCGGGGGAACAAAGTCGTCAATATTAAATCTCATCATGTCCACCGCCCAGGAG
IMP1010-ST    CCCCCTCCCGGGGGAACAAAGTCGTCAATTTTAAATCTCATCATGTCCACCGCCCAGGAG
IMP1011-48    CCCCCTCCTGGGGGAAGAAAGTCATTAATATTGAATCTCATCATGTCCACCGCCCAGGAG
IMP1011-48    CCCCCTCCTGGGGGAAGAAAGTCATTAATATTGAATCTCATCATGTCCACCGCCCAGGAG
** * * *      ***** * * * *      * * * * * * * *      * * * *

PCVPK-15      GGC--TGCGAGTATCCTCCTTTT-ATGGTGAGTACAAATTCTGTAGAAAGGCGGGAATTG
IMP999-ECO    GCGGTTCTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTG
IMP1010-ST    GCGGTTGTGACTGTGGTAGCCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTG
IMP1011-48    GCGGTTCTGACTGTGGTTCGCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTG
IMP1011-48    GCGGTTTTGACTGTGGTTCGCTTGACAGTATATCCGAAGGTGCGGGAGAGGCGGGTGTG
*** *      * * * * *      * * * *      * * * *      * * * * *

PCVPK-15      AAGATACCCGTCTTTTCGGCGCCATCTGTAACGGTTTCTGAAGGCGGGGTGTGCCAAATAT
IMP999-ECO    AAGATGCCATTTTTCTTTCTCCAACGGTAGCGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
IMP1010-ST    AAGATGCCATTTTTCTTTCTCCAACGGTAGCGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
IMP1011-48    AAGATGCCATTTTTCTTTCTCCAGCGGTAACGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
IMP1011-48    AAGATGCCATTTTTCTTTCTCCAGCGGTAACGGTGGC-GGGGGTGGA-CGAGCCAGGGGC
***** * *      * * * *      * * * * * * * *      * * * *

PCVPK-15      GGTCTTCTCCGGAGGATGTTTCCAAGATGGCTGCGGGGGCGGGTCTTCTTCTGCGGTAA
IMP999-ECO    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTGCGGTAA
IMP1010-ST    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTGCGGTAA
IMP1011-48    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTCCGGTAA
IMP1011-48    GG----CGGCGGAGGATCTGGCCAAGATGGCTGCGGGGGCGGTGTCTTCTTCTCCGGTAA
**      *      ***** *      ***** *****      *****

PCVPK-15      CGCCTCCTTGGCCACGTCATCCTATAAAAGTGAAAGAAGTGCGCTGCTGTAGTATTACCA
IMP999-ECO    CGCCTCCTTGGATACGTCATAGC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
IMP1010-ST    CGCCTCCTTGGATACGTCATAGC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
IMP1011-48    CGCCTCCTTGGATACGTCATATC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
IMP1011-48    CGCCTCCTTGGATACGTCATATC-TGAAAACGAAAGAAGTGCGCTGTA--AGTATTACCA
***** * *      ***** * * * *      ***** *****      *****

PCVPK-15      GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCG--TCAGTG--AAAATGCCAAGCAAGAA
IMP999-ECO    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCAGCAAGAA
IMP1010-ST    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCAGCAAGAA
IMP1011-48    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCAGCAAGAA
IMP1011-48    GCGCACTTCGGCAGCGGCAGCACCTCGGCAGCACCTCAGCAGCAACATGCCAGCAAGAA
***** * * * *      * * * *      * * * * *

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FIG. 5b

FIG. 5	FIG. 5a
	FIG. 5b
	FIG. 5c
	FIG. 5d

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

-----AAGCGGCCCGCAACCCCATAAAGGTGGGTGTTACCCCTTAATAATCCTTC
GAATGGAAGAAGCGGACCCCAACCACATAAAAGGTGGGTGTTACGCTGAATAATCCTTC
GAATGGAAGAAGCGGACCCCAACCACATAAAAGGTGGGTGTTACGCTGAATAATCCTTC
GAATGGAAGAAGCGGACCCCAACCCCATAAAGGTGGGTGTTCACTCTGAATAATCCTTC
GAATGGAAGAAGCGGACCCCAACCCCATAAAGGTGGGTGTTCACTCTGAATAATCCTTC

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

CGAGGAGGAGAAAAACAAATACGGGAGCTTCCAATCTCCCTTTTGTATTATTTGTTTGT
CGAAGACGAGCGCAAGAAAATACGGGAGCTCCAATCTCCCTATTTGATTATTTTATTGT
CGAAGACGAGCGCAAGAAAATACGGGAGCTCCAATCTCCCTATTTGATTATTTTATTGT
CGAAGACGAGCGCAAGAAAATACGGGATCTTCCAATATCCCTATTTGATTATTTTATTGT
CGAAGACGAGCGCAAGAAAATACGGGATCTTCCAATATCCCTATTTGATTATTTTATTGT

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

CGGAGAGGAAGGTTTGAAGAGGGTAGAACTCCTCACCTCCAGGGGTTTGCGAATTTTGC
TGGCGAGGAGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTTCGCTAATTTTGT
TGGCGAGGAGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTTCGCTAATTTTGT
TGGCGAGGAGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTTCGCTAATTTTGT
TGGCGAGGAGGTAATGAGGAAGGACGAACACCTCACCTCCAGGGGTTTCGCTAATTTTGT
**

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

TAAGAAGCAGACTTTTAACAAGGTGAAGTGGTATTTTGGTGCCCGCTGCCACATCGAGAA
GAAGAAGCAAACCTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
GAAGAAGCAAACCTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
GAAGAAGCAGACTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA
GAAGAAGCAGACTTTTAATAAAGTGAAGTGGTATTTGGGTGCCCGCTGCCACATCGAGAA

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

AGCGAAAGGAACCGACCAGCAGAATAAAGAATACTGCAGTAAAGAAGGCCACATACTTAT
AGCCAAAGGAACCTGATCAGCAGAATAAAGAATATTGCAGTAAAGAAGGCCAACTTACTTAT
AGCCAAAGGAACCTGATCAGCAGAATAAAGAATATTGCAGTAAAGAAGGCCAACTTACTTAT
AGCGAAAGGAACAGATCAGCAGAATAAAGAATACTGCAGTAAAGAAGGCCAACTTACTGAT
AGCGAAAGGAACAGATCAGCAGAATAAAGAATACTGCAGTAAAGAAGGCCAACTTACTGAT

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

CGAGTGTGGAGCTCCGCGGAACCGAGGGAAGCGCAGCGACCTGTCTACTGTGTGAGTAC
TGAATGTGGAGCTCCTCGATCTCAAGGACAACGGAGTGACCTGTCTACTGTGTGAGTAC
TGAATGTGGAGCTCCTCGATCTCAAGGACAACGGAGTGACCTGTCTACTGTGTGAGTAC
GGAGTGTGGAGCTCCTAGATCTCAGGGACAACGGAGTGACCTGTCTACTGTGTGAGTAC
GGAGTGTGGAGCTCCTAGATCTCAGGGACAACGGAGTGACCTGTCTACTGTGTGAGTAC
**

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

CCTTTTGGAGACGGGGTCTTTGGTGACTGTAGCCGAGCAGTTCCTGTAACGTATGTGAG
CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCTGTAACGTTTGTGAG
CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCTGTAACGTTTGTGAG
CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCTGTAACGTTTGTGAG
CTTGTTGGAGAGCGGGAGTCTGGTGACCGTTGCAGAGCAGCACCTGTAACGTTTGTGAG
* * *****

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

AAATTTCCGCGGGCTGGCTGAACCTTTTGAAGTGAAGCGGGAAGATGCAGCAGCGTGATTG
AAATTTCCGCGGGCTGGCTGAACCTTTTGAAGTGAAGCGGGAAGATGCAGCAGCGTGATTG
AAATTTCCGCGGGCTGGCTGAACCTTTTGAAGTGAAGCGGGAAGATGCAGCAGCGTGATTG
AAATTTCCGCGGGCTGGCTGAACCTTTTGAAGTGAAGCGGGAAGATGCAGCAGCGTGATTG
AAATTTCCGCGGGCTGGCTGAACCTTTTGAAGTGAAGCGGGAAGATGCAGCAGCGTGATTG

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FIG. 5c

FIG. 5	FIG. 5a
	FIG. 5b
	FIG. 5c
	FIG. 5d

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

GAAGACAGCTGTACACGTCATAGTGGGCCCCGCCCGTTGTGGGAAGAGCCAGTGGGCCCCG
GAAGACCAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
GAAGACCAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
GAAGACTAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC
GAAGACTAATGTACACGTCATTGTGGGGCCACCTGGGTGTGGTAAAAGCAAATGGGCTGC

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

TAATTTTGTCTGAGCCTAGGGACACCTACTGGAAGCCTAGTAGAAATAAGTGGTGGGATGG
TAATTTTGCAGACCCGGAACCACATACTGGAACCACCTAGAAACAAGTGGTGGGATGG
TAATTTTGCAGACCCGGAACCACATACTGGAACCACCTAGAAACAAGTGGTGGGATGG
TAATTTTGCAGACCCGGAACCACATACTGGAACCACCTAGAAACAAGTGGTGGGATGG
TAATTTTGCAGACCCGGAACCACATACTGGAACCACCTAGAAACAAGTGGTGGGATGG

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

ATATCATGGAGAAGAAGTTGTTGTTTGGATGATTTTATGGCTGGTTACCTTGGGATGA
TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCGTGGGATGA
TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCGTGGGATGA
TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCCTGGGATGA
TTACCATGGTGAAGAAGTGGTTGTTATTGATGACTTTTATGGCTGGCTGCCCTGGGATGA
** *****

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

TCTACTGAGACTGTGTGACCGGTATCCATTGACTGTAGAGACTAAAGGGGGTACTGTTCC
TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACGTGACC
TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACGTGACC
TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACGTGACC
TCTACTGAGACTGTGTGATCGATATCCATTGACTGTAGAGACTAAAGGTGGAACGTGACC

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

TTTTTTGGCCCGCAGTATTTTGATTACCAGCAATCAGGCCCCCAGGAATGGTACTCCTC
TTTTTTGGCCCGCAGTATTTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
TTTTTTGGCCCGCAGTATTTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
TTTTTTGGCCCGCAGTATTTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC
TTTTTTGGCCCGCAGTATTTGATTACCAGCAATCAGACCCCGTTGGAATGGTACTCCTC

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

AACTGCTGTCCCAGCTGTAGAAGCTCTCTATCGGAGGATTACTACTTTGCAATTTTGGAA
AACTGCTGTCCCAGCTGTAGAAGCTCTCTATCGGAGGATTACTTCTTGGTATTTTGGAA
AACTGCTGTCCCAGCTGTAGAAGCTCTCTATCGGAGGATTACTTCTTGGTATTTTGGAA
AACTGCTGTCCCAGCTGTAGAAGCTCTTATCGGAGGATTACTTCTTGGTATTTTGGAA
AACTGCTGTCCCAGCTGTAGAAGCTCTTATCGGAGGATTACTTCTTGGTATTTTGGAA

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

GACTGCTGGAGAACAATCCACGGAGGTACCCGAAGGCCGATTTGAAGCAGTGGACCCACC
GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
GAATGCTACAGAACAATCCACGGAGGAA---GGGGGCCAGTTCGTCACCCTTTCCCCCCC
** *****

PCVPK-15
IMP999-ECO
IMP1010-ST
IMP1011-48
IMP1011-48

CTGTGCCCTTTTCCCATATAAAATAAATTACTGAGTCTTTTTTGTATCACATCGTAATG
ATGCCCTGAATTTCCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
ATGCCCTGAATTTCCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
ATGCCCTGAATTTCCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
ATGCCCTGAATTTCCCATATGAAATAAATTACTGAGTCTTTTT---TATCACTTCGTAATG
** * *****

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FIG. 5d

FIG. 5	FIG. 5a
	FIG. 5b
	FIG. 5c
	FIG. 5d

PCVPK-15	GTTTTTATT-TTTATTTA---TTTA----GAGGGTCTTTTAGGATAAAATTCCTCTGAATTG
IMP999-ECO	GTTTTTATTATTCAATTTAGGGTTTAAGTGGGGGGTCTTTAAGATTAAATTCCTCTGAATTG
IMP1010-ST	GTTTTTATTATTCAATTTAGGGTTTAAGTGGGGGGTCTTTAAGATTAAATTCCTCTGAATTG
IMP1011-48	GTTTTTATTATTCAATTAAGGGTT-AAGTGGGGGGTCTTTAAGATTAAATTCCTCTGAATTG
IMP1011-48	GTTTTTATTATTCAATTAAGGGTT-AAGTGGGGGGTCTTTAAGATTAAATTCCTCTGAATTG
	***** ** *
PCVPK-15	TACATAAATAGTCAGCCTTACCACATAATTTTGGGCTGTGGCTGC-ATTTTGGAGCGCAT
IMP999-ECO	TACATACATGGTTACACGGATATTGTAGTCCTGG-TCGTATATACTGTTTTCGAACGCAG
IMP1010-ST	TACATACATGGTTACACGGATATTGTAGTCCTGG-TCGTATATACTGTTTTCGAACGCAG
IMP1011-48	TACATACATGGTTACACGGATATTGTATTCTGG-TCGTATATACTGTTTTCGAACGCAG
IMP1011-48	TACATACATGGTTACACGGATATTGTATTCTGG-TCGTATATACTGTTTTCGAACGCAG
	***** ** *
PCVPK-15	AGCCGAGGCCTGTGTGCTCGACATTGGTGTGGGTATTTAAATGGAGCCACAGCTGGTTTC
IMP999-ECO	TGCCGAGGCCTACGTGGTCCACATTTCTAGAGGTTTGTAGCCTCAGCCAAAGCTGATTCC
IMP1010-ST	CGCCGAGGCCTACGTGGTCCACATTTCCAGAGGTTTGTAGTCTCAGCCAAAGCTGATTCC
IMP1011-48	TGCCGAGGCCTACGTGGTCTACATTTCCAGCAGTTTGTAGTCTCAGCCACAGCTGGTTTC
IMP1011-48	TGCCGAGGCCTACGTGGTCTACATTTCCAGTAGTTTGTAGTCTCAGCCACAGCTGATTTC
	***** *
PCVPK-15	TTTTATTATTGTTGGGTGGAACCAATCAATTGTTTGGTCCAGCTCAGGTTTGGGGGTGAAGT
IMP999-ECO	TTTTGTATTATTGTTGTTGGAAGTAATCAATAGTGGAGTCAAGAACAGGTTTGGGTGTGAAGT
IMP1010-ST	TTTTGTATTATTGTTGTTGGAAGTAATCAATAGTGGAGTCAAGAACAGGTTTGGGTGTGAAGT
IMP1011-48	TTTTGTATTATTGTTGTTGGAAGTAATCAATAGTGGAGTCAAGAACAGGTTTGGGGGTAAAGT
IMP1011-48	TTTTGTATTATTGTTGTTGGAAGTAATCAATAGTGGAGTCAAGAACAGGTTTGGGGGTAAAGT
	**** *
PCVPK-15	ACCTGGAGTGGTAGGTAAAGGGCTGCCTTATGGTGTGGCGGGAGGAGTAGTTAATATAGG
IMP999-ECO	AACGGGAGTGGTAGGAGAAGGGTTGGGGGATTGTATGGCGGGAGGAGTAGTTTACATATG
IMP1010-ST	AACGGGAGTGGTAGGAGAAGGGTTGGGGGATTGTATGGCGGGAGGAGTAGTTTACATATG
IMP1011-48	AGCGGGAGTGGTAGGAGAAGGGCTGGGTTATGGTATGGCGGGAGGAGTAGTTTACATAGG
IMP1011-48	AGCGGGAGTGGTAGGAGAAGGGCTGGGTTATGGTATGGCGGGAGGAGTAGTTTACATAGG
	* *
PCVPK-15	GGTCATAGGCCAAGTTGGTGGAGGGGGTTACAAAGTTGGCATCCAAGATAACAACAGTGG
IMP999-ECO	GGTCATAGGTTAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCAGTGG
IMP1010-ST	GGTCATAGGTTAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCAGTGG
IMP1011-48	GGTCATAGGTGAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCACTGG
IMP1011-48	GGTCATAGGTGAGGGCTGTGGCCTTTGTTACAAAGTTATCATCTAGAATAACAGCACTGG
	***** *
PCVPK-15	ACCCAACACCTCTTTGATTAGAGGTGATGGGGTCTCTGGGGTAA
IMP999-ECO	AGCCCACTCCCCTATCACCTGGGTGATGGGGGAGCAGGGCCAG
IMP1010-ST	AGCCCACTCCCCTATCACCTGGGTGATGGGGGAGCAGGGCCAG
IMP1011-48	AGCCCACTCCCCTGTCACCTGGGTGATCGGGGAGCAGGGCCAG
IMP1011-48	AGCCCACTCCCCTGTCACCTGGGTGATCGGGGAGCAGGGCCAG
	* *

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